# THE EFFECT OF HEMISPHERIC SYNCHRONIZATION ON INTRAOPERATIVE ANALGESIA

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Summary: by Monroe Products

This study sought to confirm the results of a previous study by P. Kliempt et al. (Anaesthesia, 1999, 54:769-73), which suggested that patients who listened to Hemi-Sync® would require less analgesia than those who listened to either classical music or blank tapes. "…patients in the blank tape and classical music groups required on average 4.5 times as much fentanyl as the patients in the Hemi-Sync® group".

This new double-blinded randomized study set out to improve on the accuracy of Kliempt et al. that used hemodynamics alone to direct opioid administration during surgery for numerous types of procedures. This study restricted the type of cases to two common surgical procedures and compared analgesia requirements for patients who had the same procedure. This study also used BIS* to ensure an equivalent depth of hypnosis in addition to using hemodynamics as a determinant of analgesia requirement. This study compared fentanyl administration in micrograms per kilogram per minute, whereas Kliempt et al. compared total fentanyl administration in micrograms. These intended modifications to the previous study's protocol were done to produce a more reliable and controlled study. Bariatric patients who listened to Hemi-Sync required one-third less fentanyl than the control group. One-level lumbar disk surgery patients in the experimental and control groups required similar amounts of fentanyl. There was no correlation seen between sex or age and the amount of fentanyl required.

Final conclusions noted in the study:

"Music is one of many potential adjuvants to traditional pharmacological analgesia. Attempts have been made to diminish pain by using acupuncture, massage therapy, guided imagery, hypnosis, and relaxation. We agree with Kliempt et al. that Hemi-Sync may be a promising, novel, intraoperative supplement to analgesia. A more expansive study that covers the breadth of surgical procedures and includes patient feedback, postoperative pain scores, and the incidence of nausea and vomiting would further support this conclusion."

*"BIS (bispectral index) was used to confirm that all patients were equally sedated. BIS is a processed electroencephalogram that is used to monitor anesthetic depth (degree of hypnosis) by quantifying the amplitude and frequency of electroencephalogram waves on a scale of 0 to 98, with 0 indicating minimal brain activity and 98 indicating full consciousnesses. When the BIS is between 40 and 60, the patient is in an appropriate hypnotic state. In this study, [researchers] maintained the BIS at 50 ± 10."

To obtain complete reprints of this study, address correspondence and reprint requests to:
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